



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/080,849	02/22/2002	Aaron J. Hanna	K35A1056	9641

35219 7590 06/03/2005

WESTERN DIGITAL TECHNOLOGIES, INC.
20511 LAKE FOREST DR. -C205
LAKE FOREST, CA 92630

EXAMINER

MAGEE, CHRISTOPHER R

ART UNIT	PAPER NUMBER
----------	--------------

2653

DATE MAILED: 06/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/080,849

Applicant(s)

HANNA ET AL.

Examiner

Christopher R. Magee

Art Unit

2653

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 January 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-54 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-54 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

Claim Objections

1. Claim 28 is objected, again, to because of the following informalities: Referring to claim 28, line 1, "Claim 26" should read --Claim 27--. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

*A person shall be entitled to a patent unless –
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.*

2. Claims 1, 5, 6, 10, 11, 14, 15, 18, 19, 22, 23, 26, 27, 31, 32, 36, 37, 41, 42, 46, 47, 50, 51 and 54 are rejected under 35 U.S.C. 102(b) as being anticipated by Jagt et al. (hereinafter Jagt) (US 5,898,543).

- Regarding claims 1, 6, 11 and 15, Jagt discloses a disk drive [col. 1, lines 5-11] having a disk with a recording surface (inherent property of a disk drive), comprising:

a head stack assembly [Figs. 2 and 5], including:

a body portion [16];

an actuator arm [not shown; actuator mounting region 18] cantilevered from the body portion;

a hinge portion [20], a first surface of the hinge being coupled to the actuator arm [not shown; actuator mounting region 18];

a load beam [12] having a first end and a second end, the first end being attached to a second surface of the hinge, the second surface facing away from the first surface;

a gimbal [26] coupled to the second end of the load beam [12], and

a slider [14] coupled to the gimbal.

- Regarding claims 19, 23, 27, 32, 37, 42, 47 and 51, Jagt shows a disk drive [col. 1, lines 5-11] having a disk with a recording surface (inherent property of a disk drive), comprising:

a head stack assembly [Figs. 2 and 5], including:

a body portion (i.e., base plate) [16];

an actuator arm [not shown; actuator mounting region 18] cantilevered from the body portion;

a hinge portion [20], a first surface of the hinge being coupled to the actuator arm [not shown; actuator mounting region 18];

a load beam [12] having a first end and a second end, the first end defining an integral hinge portion, the hinge portion defining a radius geometry that includes at least two radii of curvatures configured to lower load beam toward the disk such that the hinge portion defines at least one concave portion and at least one convex portion [col. 8, lines 8-38; Fig. 5];

a gimbal [26] coupled to the second end of the load beam [12], and

a slider [14] coupled to the gimbal [26].

- Regarding claims 5, 10, 14, 18, 22, 26, 31, 36, 41, 46, 50 and 54, Jagt shows the radius geometry includes a first radius of curvature, a second radius of curvature and a third radius of curvature, the first radius being closer to the mount plate than the second radius, the second

radius being closer to the mount plate than the third radius, and wherein the third radius is greater than the second radius [see Examiner's embedded Fig. 5].

U.S. Patent Apr. 27, 1999 Sheet 5 of 9 5,898,543

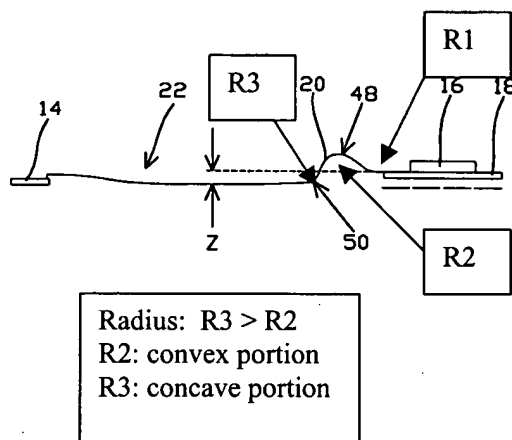


FIGURE 5

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 2, 3, 7, 8, 12, 16, 20, 24, 28, 29, 33, 34, 38, 39, 43, 44, 48 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jagt et al. (hereinafter Jagt) (US 5,898,543) as

Art Unit: 2653

applied to claims 1, 6, 11, 15, 19, 23, 27, 32, 37, 42, 47 and 51 above, and further in view of Inoue et al. (hereinafter Inoue) (US 6,362,936 B2).

- Regarding claims 2, 3, 7, 8, 12, 16, 20, 24, 28, 29, 33, 34, 38, 39, 43, 44, 48 and 52, Jagt discloses all the features as previously noted, except the mount plate having a thickness greater than 0.22 mm and the hinge having a thickness greater than 0.05 mm.

Inoue discloses a mount plate having a thickness greater than 0.22 mm and a hinge portion having a thickness greater than 0.05 mm [col. 2, lines 60-63].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the mount plate and hinge of Jagt with the dimensions as taught by Inoue.

The rationale is as follows: One of ordinary skill in the art at the time of the invention would have been motivated to make the mount plate and hinge of Jagt with the dimensions as taught by Inoue so as to provide predetermined mechanical characteristics such as natural frequency and stiffness [Inoue; col. 1, lines 30-32].

4. Claims 4, 9, 13, 17, 21, 25, 30, 35, 40, 45, 49 and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jagt et al. (hereinafter Jagt) (US 5,898,543) as applied to claims 1, 6, 11, 15, 19, 23, 27, 32, 37, 42, 47 and 51 above, and further in view of Yonemura et al. (hereinafter Yonemura) (US 6,181,521 B1).

- Regarding claims 4, 9, 13, 17, 21, 25, 30, 35, 40, 45, 49 and 53, Jagt discloses all the features as previously noted, except the load beam having a thickness greater than 0.12 mm.

Yonemura discloses a load beam having a thickness greater than 0.12 mm [col. 2, lines 60-63].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the load beam of Jagt with the dimensions as taught by Yonemura.

The rationale is as follows: One of ordinary skill in the art at the time of the invention would have been motivated to make the load beam of Jagt with the dimensions as taught by Yonemura so as to prevent self-excited vibration during disk drive operation [Yonemura; col. 2, lines 53-59].

Response to Arguments

5. Applicant's arguments filed on 01/03/2005 have been fully considered but they are not persuasive.

First, on pages 14-15, the Applicant asserts:

"Therefore, the load beam assembly of Jagt et al. does not meet the requirements of independent claims 1, 6, 11 and 15. Nothing in Jagt et al., moreover, teaches or suggests a hinge, a first surface of which is coupled to the actuator arm and a load beam, the first of which being attached to a second surface of the hinge, with the proviso that the second surface faces away from the first surface. Claims 1, 6, 11 and 15 and their respective dependent claims, therefore are not anticipated by Jagt et al."

In response to applicant's argument that the references fail to show certain features of applicant's invention, the Examiner maintains that Jagt et al. shows a hinge portion [20], a first surface of the hinge being coupled to the actuator arm [not shown; actuator mounting region 18]; and a load beam [12] having a first end and a second end, the first end defining an integral hinge portion, the hinge portion defining a radius geometry that includes at least two radii of curvatures configured to lower load beam toward the disk such that the hinge portion defines at least one concave portion and at least one convex portion [col. 8, lines 8-38; Fig. 5].

Art Unit: 2653

Therefore, the rejection of claims 1, 6, 11 and 15 in addition to dependent claims thereof is maintained.

Last, on pages 15-16, the Applicant asserts:

“To anticipate these claims, therefore, Jagt et al. must teach or show an assembly having a load beam having an integral hinge that defines at least two radii of curvature ... such that the integral hinge portion defines at least one concave portion and at least one convex portion, as shown, for example, in Fig. 7 of the present application. None of the load beams shown or described in Jagt et al. have an integral hinge portion that defines a concave portion and a convex portion. At most, the hinge/load beam of Jagt et al. define a single concave portion, as shown in Figs. 5 and 6 of this reference. Lacking in Jagt et. al. is a load beam that includes at least two radii of curvature ... such that the integral hinge portion defines at least one concave portion and at least one convex portion, as claimed.”

In response to applicant's argument that the references fail to show certain features of applicant's invention, the Examiner maintains that Jagt et al. discloses a load beam [12] having a first end and a second end, the first end defining an integral hinge portion, the hinge portion defining a radius geometry that includes at least two radii of curvatures configured to lower load beam toward the disk such that the hinge portion defines at least one concave portion and at least one convex portion [col. 8, lines 8-38; Examiner's embedded Fig. 5];

Therefore, the rejection of claims 19, 23, 27, 32, 37, 42, 47 and 51 in addition to dependent claims thereof is maintained.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher R. Magee whose telephone number is (571) 272-7592. The examiner can normally be reached on M-F, 8: 00 am-5: 30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Korzuch can be reached on (571) 272-7589. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2653

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Christopher R. Magee
Patent Examiner
Art Unit 2653

May 31, 2005



GEORGE J. LETSCHER
PRIMARY EXAMINER